AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (original): A rotary-piston engine with at least two two-armed rotary pistons (6, 7; 19) being located in an essentially spherical housing (1) and rotating in common about a rotational axis (8) running through the center of the housing, each rotary piston comprising two pistons (13-16; 29, 30) in the form of piston arms being interconnected in a fixed manner and lying essentially diametrically opposite to each other with respect to the center of the housing and, during their rotation, the rotary pistons executing pivoting displacements back and forth in opposite directions about a pivoting axis (9) running perpendicular to the rotational axis (8), whereby guide members engaging into at least one guide groove (26; 32) designed in the housing (1) for controlling the pivoting movements are mounted on at least two pistons (13-16; 29, 30), characterized in that the guide members are embodied as loose rotational bodies (27, 28), in that each of the at least two pistons (13-16) are embodied with a guide pan (25, 31) for receiving one half of one of the rotational bodies (27, 28) and in that the respective guide pan (25; 31) is connected to a supply channel for a pressurized lubricating fluid embodied in the piston (13-16; 29, 30) via a bore (34) discharging into its base region, whereby either the rotational bodies (27) are embodied in a spherical manner, the respective guide pan (25) is embodied in an essentially hemispherical manner, and the guide groove (26) is embodied with an essentially semi-circular profile, or the rotational bodies (28) are embodied in an ellipsoidal manner, the respective guide pan (31) is embodied in an essentially semi-ellipsoidal manner, and the guide groove (32) is embodied with an essentially semi-elliptical profile.

Claim 2 (original): The rotary-piston engine according to claim 1, characterized in that each of the guide pans (31) are embodied in a bearing part (33) being rotatably mounted in the piston (29, 30) about a radial axis being perpendicular to the pivoting axis (9).

Claim 3 (currently amended): The rotary-piston engine according to ~~one of claims 1 or 2~~claim 1, characterized in that the guide groove (26; 32) is embodied with an additional groove (35) deepening the base region of its profile, being defined for discharging the lubricating fluid and being in connection with at least one discharge opening (36) provided in the housing (1) for the lubricating fluid.

Claim 4 (currently amended): The rotary-piston engine according to ~~one of the preceding claims~~claim 1, the pistons (13-16; 29, 30) of which each comprise a sliding surface (20) facing the housing, an operating side with an operating surface (21), and a backside (22) facing away therefrom, whereby two operating sides facing one another of two adjacent pistons (13-16; 29, 30) define an operating chamber (23) together with the housing (1), and the backsides (22) of two adjacent pistons (13-16; 29, 30) facing one another define an antechamber (24) with the housing (1), characterized in that in the region of their sliding surfaces (20) each of the pistons (13-16; 29, 30) are embodied with a width dimension corresponding to a complete coverage of the assigned guide grooves (26; 32) located at the housing side and extending across the pivoting region of the respective piston (13-16; 29, 30).

Claim 5 (original): The rotary-piston engine according to one of the preceding claims, characterized in that the control cam for pivoting the pistons (13-16; 29, 30) formed by the guide groove (26; 32) located at the housing side is determined by sine or cosine functions, whereby a 180° rotation of the rotational axis (8) defines a cycle duration, and the pivoting angle of the pistons (13-16; 20, 30) defines the amplitude.

Claim 6 (currently amended): The rotary-piston engine according to ~~one of the preceding claims~~claim 1, characterized in that every rotary piston (6, 7) is connected with at least one balance body (40) located in the housing (1) and being dedicated for compensating the changes of the torques caused during the pivoting of the rotary pistons (6, 7) and of the guide members (27; 28) rotating about the rotational axis (8), whereby the balance body (40) is held in a position relative to the respective rotary piston (6, 7) and the pivoting axis (9), in which the mass of the balance body (40) fully or partially compensates for the changes of the torques

relative to the rotational axis (8) caused by the pivoting movement of the respective rotary piston (6, 7).

Claim 7 (currently amended): The rotary-piston engine according to ~~one of the preceding claims~~claim 1, whereby the rotational axis (8) is formed by a shaft (11) being supported on both sides in the housing (1), characterized in that the housing (1) in the wall sections surrounding the shaft (11) is embodied with two suction openings (42) located opposite to one another relative to the rotational axis (8) designed for flooding the antechambers (24) with atmospheric fresh mixture and with one connection opening (43) displaced relative thereto, of an overflow channel (44) embodied in the housing (1) for flooding the operating chambers (23) with pre-compressed fresh mixture and in that the shaft (11) is provided with two rotary slide valves (45), being insertable into the housing (1) and being assigned to a respective one of the wall sections, each having two opposite windows (46), which can be brought together with the suction openings (42) and the connection opening (43), whereby, during a 180° rotation of the shaft (11), all four windows (46) alternately release the suction openings (42), and two of the windows (46) release the connection openings (43) of the overflow channels (44).

Claim 8 (currently amended): The rotary-piston engine according to ~~one of the preceding claims~~claim 1, whereby the spherical housing (1) is divided in a junction plane (10) extending through the rotational axis (8) into two housing halves (2, 3), characterized in that the junction plane (10) is inclined at an angle (α) in the magnitude of 15-30° with respect to the upper dead center (OT) corresponding to the maximum compression in rotational direction of the rotational axis (8).

Claim 9 (original): The rotary-piston engine according to claim 8, characterized in that the overflow channels (44) are incorporated into the junction plane of one of the housing halves (2, 3) and combined in a section thereof in the center, in that a central control groove (47), which can be connected to the center section of the overflow channels (44) and is dedicated for regulating the flooding of the operating chamber (23) is incorporated in the inner wall of one of the housing halves (2, 3), the length dimension of the groove (47) extending over a peripheral

angle (β) of the inner wall in the magnitude of 30-60° and the cross-section thereof essentially corresponds to twice the cross-section of one of the overflow channels (44).

Claim 10 (original): The rotary-piston engine according to claim 9, embodied as an externally-supplied ignition engine with a throttle organ (48), an injection valve (50) for injecting the fuel, and with at least one sparkplug (51), characterized in that the throttle organ (48) is assigned to the center section of the overflow channels (44), that the injection valve (50) is mounted in wall section of the housing (1) defining the control groove (47) and directed against the respectively opening operating chambers (23), and that the at least one sparkplug (51) is located in the center of the wall section of the housing (1) surrounding the pivoting region of the pistons (13-16), the sparkplug (51) being displaced from the upper dead center (OT) opposite to the rotational direction of the rotational axis (8) at a pre-ignition angle (μ), from which equal burning distances result in or opposite to the rotational direction in the operating chambers (23), when the engine is at maximum output.

Claim 11 (original): The rotary-piston engine according to claim 9, embodied as self-ignition engine with at least one injection nozzle for injecting the fuel, characterized in that the at least one injection nozzle is mounted in the center of the wall section of the housing (1) surrounding the pivoting region of the pistons (13-16; 29, 30), the injection nozzle being displaced from the upper dead center (OT) opposite to the rotational direction of the rotational axis (8) at a pre-ignition angle (μ), from which equal burning distances result in or opposite to the rotational direction in the operating chambers (23), when the engine is at maximum output.

Claim 12 (currently amended): The rotary-piston engine according to claim 10[[or 11]], characterized in that each of the pistons (13-16; 29, 30) are embodied with a bag-shaped recess (54; 55), forming a swirl chamber and being arranged in an end section of their operating surface (21), the end section being close to the housing, whereby each of the recesses (54) of the pistons (13-16) of the externally-supplied ignition engine are embodied with a base surface (52) extending at least approximately radially relative to the pivoting axis (9), or each of the recesses

(55) of the pistons (29, 30) of the self-ignition engine are embodied with one base surface (57) converging towards the end of the operating surface (21) located close to the housing.

Claim 13 (currently amended): The rotary-piston engine according to ~~one of claims 4 to 12~~claim 4, whereby each of the rotary pistons (6, 7; 19) are connected with a wall part (17) being sealable against the inner wall of the housing (1), the wall part (17) being positioned on a journal (12) forming the pivoting axis (9) and being provided with a spherical cap (18) adapted to the form of the inner wall, characterized in that the pistons (13-16; 29, 30) are embodied with a plurality of cooling channels (58), which can be flooded with lubricating fluid from the rotational axis (8) and which are arranged behind the respective operating surface (21) in the wall sections containing the operating surfaces (21), the cooling channels (58) being in connection with the at least one discharge opening (36) embodied in the housing (1) for the lubricating fluid via the passage bores (60) arranged in the sliding surface (20) of the respective piston (13-16; 29, 30), and in that each of the wall parts (17) are embodied with at least one cooling section (59) being accordingly floodable with lubricating fluid, the cooling section (59) being in connection with the at least one discharge opening (36) via a passage bore (61) provided in the spherical cap (18).

Claim 14 (currently amended): A road vehicle with a rotary-piston engine according to ~~one of claims 1 to 13~~claim 1, embodied as a drive motor.

Claim 15 (new): The rotary-piston engine according to claim 11, characterized in that each of the pistons (13-16; 29, 30) are embodied with a bag-shaped recess (54; 55), forming a swirl chamber and being arranged in an end section of their operating surface (21), the end section being close to the housing, whereby each of the recesses (54) of the pistons (13-16) of the externally-supplied ignition engine are embodied with a base surface (52) extending at least approximately radially relative to the pivoting axis (9), or each of the recesses (55) of the pistons (29, 30) of the self-ignition engine are embodied with one base surface (57) converging towards the end of the operating surface (21) located close to the housing.